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Pit Production Strategic Analysis Tool

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Summary

The LANL Pit Production Strategic Analysis tool is an executive-level decision support tool for planning related to the demand and production of pits. The spreadsheet-based tool includes decision factors for stockpile program demand combined with production and infrastructure planning at PF-4, Savanna River, and future production options. The tool graphically compares supply and demand under different scenarios. The tool is based on NNSA planning documents and process analyses.

Background

The LANL Pit Production Strategic Analysis Tool was developed to investigate potential variations to the pit production plan specified in the P&PD. The tool will be used to support options studies for STRATCOM, NA-18, EMAC, and others as needed. The tool relies on production tables from the P&PD as reference data, as well as program of record data on production capabilities. The tool allows variation of plans for pit production capacity, pit reuse capacity, and variation of pit production schedules and demand. The tool additionally provides graphical representations of pit production for individual modernization programs and pit inventory.

Demand

The demand for pits is based on the pit production tables in the P&PD. For each future system refurbishment, the P&PD identifies the pit strategy, reuse or new manufacture, and specifies the period during which the pits would be manufactured or evaluated for reuse. For some future systems, the P&PD specifies that the final decision on reuse versus new manufacture has not been made. The tool allows variation on the timing of each LEP, and can investigate scope decisions on select future LEPs.

Pit Production

The tool includes production capabilities and timing, as specified in the current Program of Record (P&PD and infrastructure investments). The tool includes “Production Capacity” reflecting the magnitude of the production capability and “First production” corresponding to when the capability becomes available. The tool enables investigation of this plan by allowing variation of the first production date and capacity. In addition, each production line can have a surge production period. The model also includes capacities for pit reuse at Pantex and minor modification at PF-4.

Additional Features

The tool can show details of the pit plan for specific weapon systems. These displays show pit production in combination with system assembly. Also incorporated into the tool is data on the national pit inventory. The tool can display the plan for each pit type in categories of strategic reserve, reuse, dismantlement, or incorporation in an assembled system.

Tool Output

The key output of the tool is a graphical comparison of demand to production capacity for pits. Additional details show demand and capacity by process line. Other features include a utility for investigating pit inventory and graphical output for pit production for specific modernization programs.